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(Modified) PTO/SB/08A-B (10-96) Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO	PADEMARK C	omplete if Known
	Application Number	09/656549 09 72 1,507
INFORMATION DISCLOSURE	Filing Date	September 6, 2000
STATEMENT BY APPLICANT	First Named Inventor	Joseph A. Affholter
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
(use as many sheets as necessary)	Attorney Docket Number	02-104240US

			U.	S. PATENT DOCUMENTS	•	
	$\Gamma = \Gamma$	U.S. Patent Doc	ument	Name of Patentee or Applicant of	Date of Publication of	Pages, Columns, lines,
Examiner Initials	Cite No.	Number	Kind Code (if known)	Cited Document	Cited Document MM-DD-YYYY	Where Relevant Passages or Relevant Figures Appeal
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				FOREIGI	N PATENT DOCUMEN	TS		
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1352		wo	00/00632		Phylos, Inc.	01-06-2000		
MAT		wo	00/09679		Proteus	02-24-2000		-
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		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	-
			
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^{*}EXAMINER: Initial if reference considered, whether er not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96) Approved for use through 10/31/99. OMB 0651-0031

Complete if Known Substitute for form 1449A-B/PTO 09/050549 09/721,507 **Application Number** Filing Date September 6, 2000 INFORMATION DISCLOSURE First Named Inventor Joseph A. Affholter STATEMENT BY APPLICANT **Group Art Unit** 1645 Unassigned **Examiner Name** JAN 1 6 ZUUT (use as many sheets as necessary) 02-104240US Attorney Docket Number

			Ū	S. PATENT DOCUMEN	ITS	The sale
		U.S. Patent Docu		Name of Patentee or Applicant	of Date of Publication of	Pages, Coldinag, Aines 1
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1	AB	5,514,588		Varadaraj	05-07-1996	
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	AO	5,925,749		Mathur, et al.	07-20-1999	<u> </u>
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	AQ	5,939,250		Short, Jay M.	08-17-1999	
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Substitute for form 1449A-B/PTO	MANENT Complete if Known		
	Application Number	-09/656549 09/721,507	
NFORMATION DISCLOSURE	Filing Date	September 6, 2000	
STATEMENT BY APPLICANT	First Named Inventor	Joseph A. Affholter	
51/(1 Livel 1	Group Art Unit	1645	
	Examiner Name	Unassigned	
(use as many sheets as necessary)	Attorney Docket Number	02-104240US	

my	ВВ	6,004,788	Short	12-21-1999	
1	ВС	6,030,779	Short	02-29-2000	
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Exar er Initi	r	Cite No.	Office	Foreign Patent Docu		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-OD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Т
1)		вн	wo	97/07205		Novo Nordisk A/S	02-27-1997	Λ	
,		ВІ	wo	97/20078		Affymax Technologies	06-05-1997		
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		ВК	wo	97/35957		Maxygen, Inc.	10-02-1997		_
		BL	wo	97/35966		Maxygen, Inc.	10-02-1997		
		ВМ	wo	97/44361		Recombinant Biocatalysis Inc.	11-27-1997		
		BN	wo	97/48416		Recombinant Biocatalysis, Inc.	12-24-1997		
		во	wo	97/48717		Recombinant Biocatalysis Inc	12-24-1997 ·	X	
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		BQ	wo	98/00526		Recombinant Biocatalysis Inc	01-08-1998		
1		BR	wo	98/01581		Recombinant Biocatalysis Inc	01-15-1998		
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+		BU	wo	98/24799		Diversa Corp.	06-11-1998		
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02-104240US

Substitute for form 1449A-B/PTO

Application Number

Application Number

O9/636549

Filing Date

September 6, 2000

First Named Inventor

Group Art Unit

Examiner Name

Unassigned

Attorney Docket Number

D	M	ВW	wo	98/28416	Novo Nordisk A/S	07-02-1998	<u> </u>
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П		BY	wo	98/36080	Maxygen, Inc.	08-20-1998	
		BZ	wo	98/41622	Novo Nordisk A/S	09-24-1998	
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		СС	wo	98/42832	California Institute of Technology	10-01-1998	
		CD	wo	98/48034	Diversa Corp.	10-29-1998	
\exists		CE	wo	98/58085	Diversa Corp.	12-23-1998	
\neg		CF	wo	99/07837	Diversa Corp.	02-19-1999	
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		СН	wo	99/10472	Diversa Corp.	03-04-1999	
		CI	wo	99/10539	Diversa Corp.	03-04-1999	
		Cl	wo	99/19518	Diversa Corp.	04-22-1999	
		СК	EP	0911396A2	Maxygen, Inc.	04-28-1999	
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1	71	cw	wo	99/65927	Maxygen, Inc,	12-23-1999	

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(Modified) PTO/SB/08A-B (10-96) Approved for use through 10/31/99. OMB 0651-0031

Complete if Known Substitute for form 1449A-B/PTO Application Number 09/656549-09 172) Filing Date September 6, 2000 INFORMATION DISCLOSURE First Named Inventor Joseph A. Affholter STATEMENT BY APPLICANT 1645 **Group Art Unit** Unassigned **Examiner Name** (use as many sheets as necessary) 02-104240US Attorney Docket Number

Examin Cite II er No. Initials		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	7		
My cx		Chang, C., et al. (1999) "Evolution of a cytokine using DNA family shuffling." Nature Biotechnology 17:793-797.			
	CY	Christians, F.C. et al., (1999) "Directed evolution of thymidine kinase for AZT phosphorylation using DNA family shuffling." Nature Biotechnology 17:259-264.			
	CZ	Crameri et al., (1993) "10(20)-Fold aptamer library amplification without gel purification," Nuc. Acids Res. 21(18):4410.			
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Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

C C	omplete if Known
Application Number	09/656549 09/721,507
Filing Date	September 6, 2000
First Named Inventor	Joseph A. Affholter
Group Art Unit	1645
Examiner Name	Unassigned
Attorney Docket Number	02-104240US

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

		U.S. Patent D	ocument	S. PATENT DOCUMENTS Name of Patentee or Applicant of	Date of Publication of	Pages, Columns, lines, Where Relevant Passages
Examiner Initials	Cite No.	Number	Kind Code (if known)	Cited Document	Cited Document MM-DD-YYYY	or Relevant Figures Appeal
mm)	AA	5,756,316		Schellenberger	05-26-1998	
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Signature

INFORMATION DISCLOSURE

STATEMENT BY APPLICANT

Complete if Known **Application Number** 09/656549 September 6, 2000 Filing Date First Named Inventor Joseph A. Affholter **Group Art Unit** 1645 **Examiner Name** Unassigned JUN 0 7 2001 02-104240US **Attorney Docket Number**

(use as many sheets as necessary)

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS TECH CENTER 1
Examin er Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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	ВС	Caldwell et al. (1992) PCR Methods Applic. 2:28-33
	BD	Carter (1986) "Site-directed mutagenesis" Biochem J. 237:1-7
	BE	Carter (1987) "Improved oligonucleotide-directed mutagenesis using M13 vectors" Methods in Enzymol. 154: 382-403
	BF	Carter et al. (1985) "Improved oligonucleotide site-directed mutagenesis using M13 vectors" Nucl. Acids Res. 13: 4431-4443
	BG	Dale et al. (1996) "Oligonucleotide-directed random mutagenesis using the phosphorothicate method" Methods Mol. Biol. 57:369-374
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	ВІ	Delegrave and Youyan (1993) Biotechnology Research 11:1548-1552
	BJ	Eghtedarzadeh & Henikoff (1986) "Use of oligonucleotides to generate large deletions" Nucl. Acids Res. 14: 5115
	вк	Fritz et al. (1988) "Oligonucleotide-directed construction of mutations: a gapped duplex DNA procedure without enzymatic reactions in vitro" Nucl. Acids Res. 16: 6987-6999
!	BL	Grundström et al. (1985) "Oligonucleotide-directed mutagenesis by microscale 'shot-gun' gene synthesis" Nucl. Acids Res. 13: 3305-3316
	ВМ	Guzman et al. (1995) "Tight regulation, modulation, and high-level expression by vectors containing the arabinose PBAD promoter" <i>J. Bacteriol.</i> 177(14):4121-4130
	BN	Jirholt et al. (1998) "Exploiting sequence space: shuffling in vivo formed complementarity determining regions into a master framework" Gene 215: 471
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

C	omplete if Known
Application Number	09/656549 09/721,507
Filing Date	September 6, 2000 \ \-22-00
First Named Inventor	Joseph A. Affholter
Group Art Unit	1645
Examiner Name	Unassigned
Attorney Docket Number	02-104240US

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	ВО	Kramer et al. (1984) "Point Mismatch Repair" Cell 38:879-887	
	BR	Kramer et al. (1984) "The gapped duplex DNA approach to oligonucleotide-directed mutation construction" Nucl. Acids Res. 12: 9441-9456	
	BS	Kramer et al. (1988) "Improved enzymatic in vitro reactions in the gapped duplex DNA approach to oligonucleotide-directed construction of mutations" Nucl. Acids Res. 16: 7207	
	ВТ	Kunkel (1985) "Rapid and efficient site-specific mutagenesis without phenotypic selection" Proc. Natl. Acad. Sci. USA 82:488-492	
	BU	Kunkel (1987) "The efficiency of oligonucleotide directed mutagenesis" in <i>Nucleic Acids & Molecular Biology</i> (Eckstein, F. and Lilley, D.M.J. eds., Springer Verlag, Berlin)	
	BV	Kunkel et al. (1987) "Rapid and efficient site-specific mutagenesis without phenotypic selection" Methods in Enzymal. 154, 367-382	
	BW	Leung et al. (1989) Technique 1:11-15	
	вх	Lim and Sauer (1991) "The role of internal packing interactions in determining the structure and stability of a protein" <i>J. Mol. Biol.</i> 219:359-76	
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	BZ	Mandecki, Oligonucleotide-directed double-strand break repair in plasmids of Escherichia coli: a method for site-specific mutagenesis" Proc. Natl. Acad. Sci. USA, 83:7177-7181	
	CA	Meador, J and Kennell, D. (1990) Gene 95:1	
	СВ	Meador, J. et al. (1990) Eur J. Biochem. 187:549	
	СС	Nakamaye & Eckstein (1986) "Inhibition of restriction endonuclease Nci I cleavage by phosphorothicate groups and its application to oligonucleotide-directed mutagenesis" Nucl. Acids Res. 14: 9679-9698	
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	CE	Nikiforov et al. (1994) "The Use of Phosphorotioate Primers and Exonuclease Hydrolysis for the Preparation of Single-Stranded PCR Products and their Detection by Solid-Phase Hybridization," PCR Methods and Applications 3:285-291	
	CF	Ostermeier et al. (1999) "A combinatorial approach to hybrid enzymes independent of DNA homology" Nature Biotech 17:1205	
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STATEMENT BY APPLICA

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

C	omplete if Known
Application Number	09/050549 09/72/1807
Filing Date	September 6, 2000 11-22-00
First Named Inventor	Joseph A. Affholter
Group Art Unit	1645
Examiner Name	Unassigned
Attorney Docket Number	02-104240US

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	CN	Smith (1985) "In vitro mutagenesis" Ann. Rev. Genet. 19:423-462	
	СО	Stemmer et al., (1995) "Single-step assembly of a gene and entire plasmid form large numbers of oligodeoxy-ribonucleotides" Gene, 164:49-53	
	СР	Taylor et al. (1985) "The rapid generation of oligonucleotide-directed mutations at high frequency using phosphorothioate-modified DNA" <i>Nucl. Acids Res.</i> 13: 8765-8787 (1985)	
	CQ	Taylor et al. (1985) "The use of phosphorothioate-modified DNA in restriction enzyme reactions to prepare nicked DNA" Nucl. Acids Res. 13: 8749-8764	
	CR	Wells et al. (1985) "Cassette mutagenesis" an efficient method for generation of multiple mutations at defined sites" Gene 34:315-323	
	CS	Wells et al. (1986) "Importance of hydrogen-bond formation in stabilizing the transition state of subtilisin" <i>Phil. Trans. R. Soc. Lond. A</i> 317: 415-423	
	СТ	Zhao and Arnold (1997) "Functional and nonfunctional mutations distinguished by random recombination of homologous genes," <i>Proc. Natl. Acad. Sci. U.S.A.</i> 94(15):7997-8000	
	CU	Zhao, et al., "Molecular evolution by staggered extension process (StEP) in vitro recombination," Nature Biotechnology (March 1998), 16(3):258-61	
	CV	Zhou et al., (1995) Biotechniques 19:34-35	
	CW	Zhou et al., (1998) "Regulatory Roles of the P Domain of the Subtilisin-like Prohormone Convertases," J. Biol. Chem., 273(18):11107	
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.